

## ABSTRACT OF THE DISCLOSURE

5 An information need can be modeled by a binary classifier such as support vector machine (SVM). SVMs can exhibit very conservative precision oriented behavior when modeling information needs. This conservative behavior can be overcome by adjusting the position of the hyperplane, the geometric representation of a SVM. The present invention describes a couple of automatic techniques for adjusting the position of an SVM model based upon a beta-gamma thresholding procedure, cross fold validation and retrofitting. This adjustment technique can also be applied to other types of learning strategies.

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